



Did you know?

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Advanced Virtual Mission Operations Center Technology Considered for Critical Role in Disaster Relief Operations

A new, "virtual" mission operations capability, developed jointly by NASA Glenn Research Center and the General Dynamics Corporation, successfully provided an indirect satellite command and control capability to non-space professionals interested in obtaining the latest imagery for disaster relief operations. A recent graduate of the NASA Earth-Sun System Technology Office (ESTO), the Virtual Mission Operations Center (VMOC), provides a framework for mission partners to define, test, validate, and field a command and control system capable of supporting secure, distributed mission operations of any Internet Protocol (IP)-based platform or sensor.

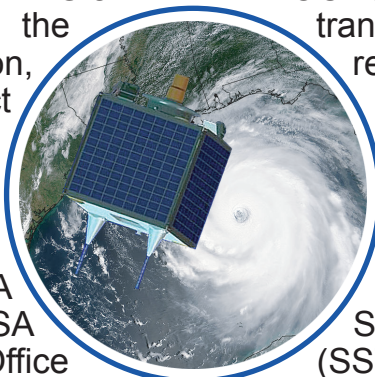
VMOC can be accessed on a generic, Web-enabled desktop computer via a password-protected virtual private network (VPN) connection that is continuously monitored using advanced intrusion detection technology developed by the Air Force Information Warfare Center. Users are allowed to perform specific functions based on individual privileges. User functions can range from simple data access all the way up to complete command and control of the platform. Commands are weighed and executed in the order of importance, and all are autonomously evaluated in real-time for appropriateness

using pre-defined mission rules. Because VMOC is Web-based, it is easy to use, transparent, widely accessible, and requires no advanced knowledge of satellite operations.

Flight proven using the United Kingdom Disaster Monitoring Constellation (UK-DMC) satellite platform, provided by Surrey Satellite Technology Limited (SSTL), VMOC is currently being applied to a number of military flight projects, including as a command and control capability for the Naval Research Laboratory's TacSat1 mission.

VMOC is also being evaluated for use by the US Geological Survey (USGS) to provide rapid access to satellite imagery during disaster relief operations. In the aftermath of hurricane Katrina, the USGS noted the difficulty it had with obtaining satellite imagery of the disaster area (it took several days to obtain the first images). SSTL, a key provider of this imagery, offered to make its satellite imagery services available using VMOC technology. Once fully implemented, USGS users will be able to log into the system from any location in the world and request imagery of specific locations under specific conditions.

For more information about emerging technologies visit <http://esto.nasa.gov>



**Virtual Mission
Operations Center
(VMOC)**

